

**ABSTRACT**

A method suitable for implementation in a computer product for Variable Cam Timing (VCT) closed-loop control system includes a set point filter to smooth out any abrupt change of a set point and also reduces the closed-loop control system overshoot. At low engine speed, however, the closed-loop control system may introduce excessive response time when forcing the VCT to follow the filtered set point. Therefore, instead of using the original filtered set point other set point values are used. By modifying error zero signal in the closed-loop control system, this invention eliminates the excessive response time introduced by the set point filter.